

The Commonwealth of Massachusetts  
Executive Office of Public Safety and Security  
One Ashburton Place, Room 2133  
Boston, Massachusetts 02108

Tel: (617) 727-7775  
TTY Tel: (617) 727-6618  
Fax: (617) 727-4764  
[www.mass.gov/eops](http://www.mass.gov/eops)

CHARLES D. BAKER  
Governor

KARYN E. POLITO  
Lt. Governor

DANIEL BENNETT  
Secretary

2<sup>55</sup>  
PM  
3-9-18

March 9, 2018

The Honorable William F. Welch  
Clerk of the Senate  
State House, Room 335  
Boston, MA 02133

The Honorable Steven T. James  
Clerk of the House  
State House, Room 145  
Boston, MA 02133

Dear Mr. Welch and Mr. James:

Pursuant to M.G.L. c. 140, § 2, please find attached the Executive Office of Public Safety and Security's annual report Electronic Control Weapons in Massachusetts: 2016.

We hope you find this information helpful. Please let us know if we may be of further assistance.

Sincerely,

  
Daniel Bennett  
Secretary of Public Safety and Security

Encl.  
2018 Report



LEGISLATIVE REPORT | JANUARY 2018

# Electronic Control Weapons in Massachusetts: 2016

This report examines data prepared by Massachusetts law enforcement agencies with approved electronic control weapons (ECW) training programs for the period January 1, 2016 through December 31, 2016. Approved agencies are required to complete and submit semi-annual ECW reports on information related to: 1) the number of sworn officers serving the agency; 2) the number of ECW trained officers serving the agency; 3) the number of ECWs owned by the agency; 4) the number of total incidents that occurred during the reporting period; 5) general details about each incident (e.g., warnings, deployments, submissions, etc.); and 6) demographic information about the subject.

The terms and definitions referenced in this report are provided on page 7.

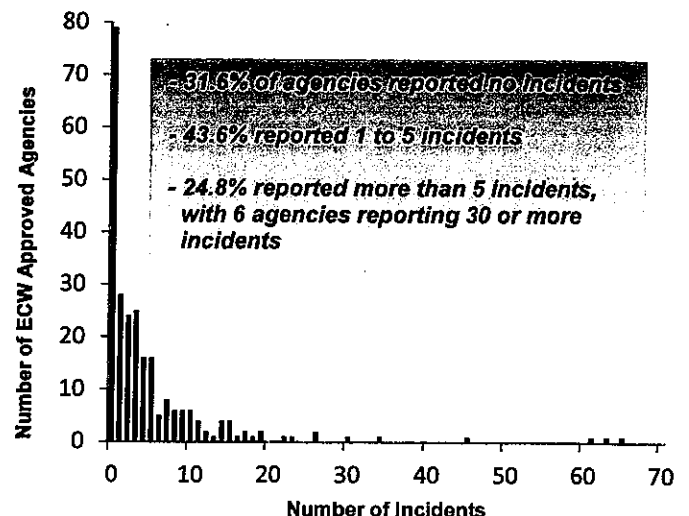
## ECW INCIDENTS AND POLICE DEPARTMENTS

During 2016, twenty police departments were approved for *electronic control weapons (ECW)*<sup>1</sup> use, bringing the cumulative total to 250 (ECW) *approved agencies* in Massachusetts (see *Legislative Language*, pg. 2).

The total number of *ECW incidents* reported was 1,241, but the number reported by each department ranged widely from zero (79 agencies) to 65 incidents (one agency) (Figure 1). More than three-quarters of agencies reported 5 or less incidents, of which 31.6% had no incidents and 30.8% had 1-3 incidents; 24.8% of agencies reported more than five incidents, including six

agencies with 30 or more incidents. These six agencies accounted for slightly less than a quarter (24.0%) of all ECW incidents in 2016 (Appendix table 1, pgs. 8-14).

Figure 1. Number of ECW Incidents by ECW Approved Agencies, Calendar Year 2016



<sup>1</sup> For Terms and Definitions, see pg. 7

### Legislative Language

Massachusetts General Law Chapter 140, Section 131J permits the use of electronic control weapons (ECW) by law enforcement personnel in the course of their official duties, provided that they have completed a training course approved by the Executive Office of Public Safety and Security (EOPSS). The statute requires that ECW devices contain a mechanism in order to track the number of times each weapon is deployed (as amended by St. 2004, c. 170, § 1). In October 2004, in response to Chapter 170 of the Acts of 2004, EOPSS promulgated 501 CMR 8.00 *et seq.*, regulations governing the sale of electronic control weapons in the Commonwealth and the training of law enforcement personnel on the appropriate use of such weapons. In September 2005, EOPSS began authorizing ECW training programs in order to facilitate the purchase and use of ECWs by law enforcement agencies in the Commonwealth.

The law further requires that EOPSS develop a uniform protocol directing state and municipal police officers to collect data pursuant to this act. Such data shall include the number of times the device or weapon has been fired and the identifying characteristics, such as race and sex, of the individuals who have been fired upon.

Law enforcement agencies may request approval from EOPSS for their proposed ECW training programs on a rolling basis over the course of a calendar year. Once approved, the law enforcement agency is required to report on its ECW usage, regardless of whether equipment or training is procured.

### CURRENT TRENDS

The five-year trends reveal modest growth in the number of ECW incidents from 2012 to 2016, ranging from a 3.3% increase in 2013-2014, to a 12.8% increase in 2012-2013 (Figure 2 and Table 1). Prior to 2012, the number of incidents increased more dramatically (61.4%) from 521 in 2011 to 841 in 2012.

Interestingly, each year since 2012, growth in the number of ECW agencies, officers, and devices

outpaced growth in the number of ECW incidents (Table 1). For example, from 2014 to 2015, ECW incidents grew by 12.4% while the number of approved agencies grew by 17.9%, sworn officers increased 19.5%, ECW trained officers increased 21.4%, and ECW agency owned devices increased 25.8%. The most recent period 2015-2016 shows a similar pattern with one difference: growth in the number of incidents (12.6%) outpaced growth in the number of ECW approved agencies (8.7%). Nevertheless the 12.6% growth in ECW incidents was less than half that of ECW trained officers (30.9%) and agency owned devices (42.3%). Additionally, 2015 to 2016 saw the largest yearly growth since 2011 in numbers of agency sworn officers, ECW trained officers, and agency owned ECW devices.

The ratio of ECW incidents to ECW trained officers reveals a promising trend: decreasing numbers of ECW incidents per ECW trained officers over the period. During the years 2012-2014 the ratio of incidents to officers was 1 to 5, increasing to 1 to 6 in 2015 and 1 to 7 in 2016.

Figure 2. ECW Incidents, Calendar Years 2012-2016

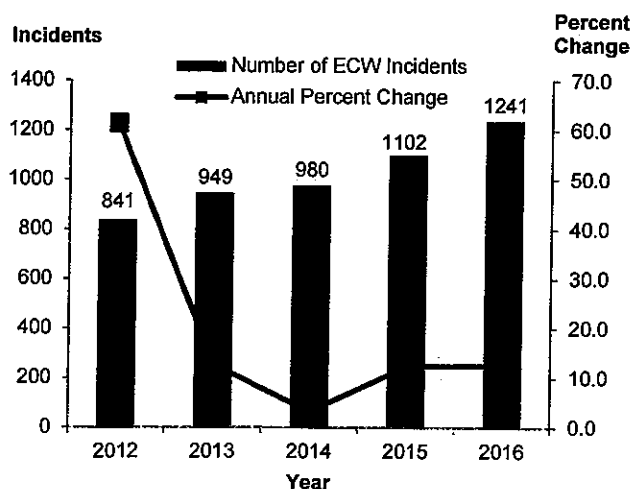


Table 1. Characteristics of ECW Approved Agencies, Calendar Years 2011-2016<sup>a</sup>

	Number						Annual Percent Change				
	2011	2012	2013	2014	2015	2016	2011 - 2012	2012 - 2013	2013 - 2014	2014 - 2015	2015 - 2016
ECW Incidents	521	841	949	980	1,102	1,241	61.4%	12.8%	3.3%	12.4%	12.6%
ECW Approved Agencies	123	145	172	195	230	250	17.9%	18.6%	13.4%	17.9%	8.7%
Sworn Officers <sup>b</sup>	6,839	7,564	8,648	9,318	11,139	14,374	10.6%	14.3%	7.7%	19.5%	29.0%
ECW Trained Officers <sup>b</sup>	3,134	4,013	4,620	5,363	6,512	8,521	28.0%	15.1%	16.1%	21.4%	30.9%
ECW Agency Owned Devices <sup>b</sup>	1,656	2,193	2,586	3,358	4,223	6,008	32.4%	17.9%	29.9%	25.8%	42.3%

<sup>a</sup>Comparisons of the number of incidents to the number of officers or agency owned ECW devices can vary widely per department.

<sup>b</sup>Numbers reported as of the end of the calendar year.

## ECW CONTACTS

From January 1, 2016 through December 31, 2016, ECW approved agencies reported 1,338 *ECW contacts*.<sup>2</sup> Ten contacts were non-human subjects such as dogs or other animals. The remaining 1,328 contacts comprised human subjects.

The majority (92.7%) of the 1,328 contacts was male (Appendix table 2, pg. 15). Slightly less than two-thirds comprised white subjects (61.3%), followed by black subjects (19.3%), Hispanic subjects (16.3%), and subjects of other races (1.4%).<sup>3</sup> About half of subjects were between 20 and 34 years of age (52.7%); one third (33.0%) were between 35 and 59 years of age (Appendix table 3, pg. 15). Individuals younger than 20 years of age (6.7%) and individuals 60 years of age or older (1.5%) represented the smallest proportion of ECW subjects.

<sup>2</sup> Multiple ECW contacts can occur during a single ECW incident, (e.g., an incident in which two officers each deploy an ECW at a subject is considered two contacts and one incident). This section details ECW contacts between officers and subjects.

<sup>3</sup> Other comprises race categories of American Indian/Alaska Native, Asian, and a combination of two or more races.

## ECW WARNINGS AND SUBMISSIONS

Of the 1,328 ECW contacts with human subjects, approximately 88% (1,170) began with the officer issuing at least one *ECW warning (verbal warning, laser warning, and/or spark warning)* in attempt to gain the subject's submission. As shown in Table 2, officers issued just one warning type in 47.9% of contacts; verbal

Table 2. ECW Warning Types for Contacts by Submissions, Calendar Year 2016

Characteristic	Contacts		Submissions <sup>a</sup>		Percent that Submit
	Number	Percent	Number	Percent	
Total	1,170	100.0%	546	100.0%	46.7%
One Warning	561	47.9	222	40.7	39.6
Verbal	538	46.0	210	38.5	39.0
Laser	22	1.9	12	2.2	54.5
Spark	1	--	0	0.0	--
Multiple Warnings	609	52.1	324	59.3	53.2
Verbal/laser	535	45.7	296	54.2	55.3
Verbal/spark	30	2.6	10	1.8	33.3
Laser/spark	2	--	1	--	--
Verbal/laser/spark	42	3.6	17	3.1	40.5

<sup>a</sup> Cases where subject submitted for duration of the incident.

-- Percentages with such a small denominator are not statistically reliable.

**Table 3. Percent of Contacts With a Warning and/or ECW Weapon Deployment, by Subject Characteristic, Calendar Year 2016**

Characteristic		Contacts with a Warning, No ECW Deployment			Contacts with a Warning and ECW Deployment			Contacts with an ECW Deployment, No Warning		
		Number	Percent		Number	Percent		Number	Percent	
<b>Sex<sup>a</sup></b>	<b>Total</b>	<b>648</b>	<b>49.0</b>	<b>%</b>	<b>517</b>	<b>39.1</b>	<b>%</b>	<b>158</b>	<b>11.9</b>	<b>%</b>
	Male	600	48.7		486	39.5		145	11.8	
	Female	48	52.2		31	33.7		13	14.1	
<b>Race/Ethnicity<sup>a</sup></b>	<b>Total</b>	<b>641</b>	<b>49.1</b>	<b>%</b>	<b>511</b>	<b>39.1</b>	<b>%</b>	<b>154</b>	<b>11.8</b>	<b>%</b>
	White	416	51.1		298	36.6		100	12.3	
	Black	107	41.8		119	46.5		30	11.7	
	Hispanic	104	47.9		92	42.4		21	9.7	
	Other	14	—		2	--		3	--	
<b>Age<sup>a</sup></b>	<b>Total</b>	<b>617</b>	<b>48.5</b>	<b>%</b>	<b>502</b>	<b>39.5</b>	<b>%</b>	<b>152</b>	<b>12.0</b>	<b>%</b>
	19 Years or Younger	47	50.0		40	42.6		7	7.4	
	20 – 24 Years	126	51.9		88	36.2		29	11.9	
	25 – 29 Years	121	46.4		102	39.1		38	14.6	
	30 – 34 Years	99	46.7		80	37.7		33	15.6	
	35 – 44 Years	109	45.4		105	43.8		26	10.8	
	45 – 54 Years	79	50.3		62	39.5		16	10.2	
	55 Years or Older	36	56.3		25	39.1		3	4.6	

— Percentages with such a small denominator are not statistically reliable.

<sup>a</sup>Unknown or missing information are excluded from totals: sex (n=5), race/ethnicity (n=22), and age (n=57).

warnings were the most common (538 of 561, 95.9%). The majority of contacts (52.1%) involved multiple warnings of which verbal and laser warnings comprised the bulk (535 of 609, 87.8%). For contacts who received only one warning, laser warnings had the highest rate of submission (54.5%); for contacts with multiple warnings, a combination of verbal and laser warnings had the highest rate of submission (55.3%).

A minimal number of contacts (171 or 12.9%) received no warnings. Agencies indicated that sudden actions by the subject (i.e., subjects becoming immediately combative during handcuffing) required immediate *ECW deployment* and precluded an opportunity for the officer to issue a warning. Additionally, incidents involving two or more officers may result in one warning but multiple deployments from each officer.

Table 3 presents data on the 1,323 human contacts for which subject characteristics are known. The data show officers' use of warnings, and/or ECW weapons deployments by sex, race/Hispanic ethnicity, and age of subjects. The data reveals a consistent pattern across all of the subject groups: a) in about 5 out of 10 contacts the officer issues an ECW warning with no subsequent ECW weapon deployment, b) in about 4 out of 10 contacts, the officer issues an ECW warning followed by an ECW weapon deployment, and c) in about 1 out of 10 contacts, the officer deploys an ECW weapon with no prior ECW warning.

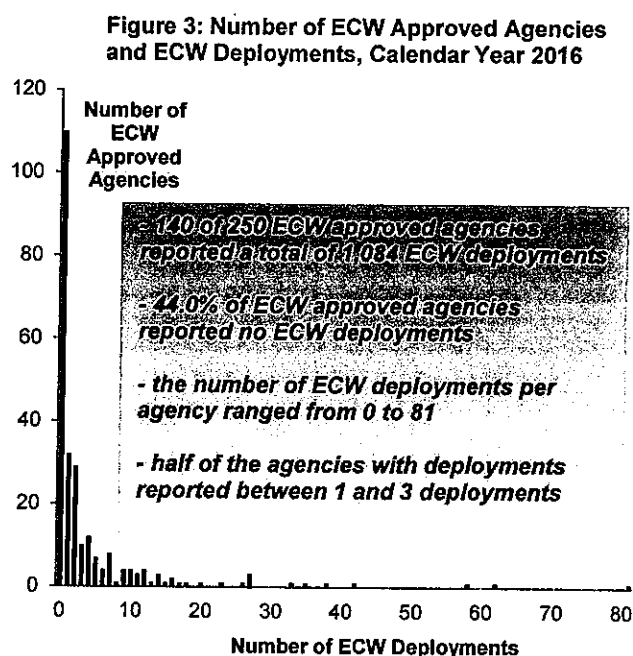
Male subjects received an ECW warning slightly more often than female subjects (88.2% and 85.9%, respectively). Amongst the four racial/Hispanic ethnicity categories, Hispanic subjects were most frequently issued warnings (90.3%), followed by black subjects (88.3%) and white subjects (87.7%). Individuals 55 years of age and older received a warning 95.3% of the time. The youngest subjects, those less than 20 years of age, also received the highest percentage of warnings. Amongst other age categories, the likelihood of receiving a warning ranged from 85.4% for 25-29 year olds to 89.8% for 45-54 year olds.

### **ECW DEPLOYMENTS**

Of the 250 ECW approved agencies, 140 agencies (56%) reported one or more ECW deployments and 110 agencies (44%) did not deploy ECW weapons during the year (Figure 3). The 140 agencies reported a total of 1,084 weapon (probe and/or stun) deployments. Of the

agencies with ECW deployments, the number of deployments (probe and/or stun) ranged from 1 to 81, with the majority of departments (50.7%) reporting between 1 and 3 deployments.

Appendix table 4, pgs.16-22 provides information on the type of deployment by department, revealing slightly higher overall usage of stun versus probe deployments, 52.2% compared with 47.8%, and greater dispersion in the number of stun deployments by department (1 to 63 deployments) than the number of probe deployments by department (1 to 36).



Officers deployed ECW weapons in about half (50.9%) of all contacts; overall, subjects submitted to ECW deployments 72.9% of the time (Table 4). Slightly less than half of the deployments (48.1%) involved individual probe deployments (the firing of two small dart-like probes from the ECW, which attach to the

**Table 4. Distribution of ECW Submissions by ECW Deployment Types,  
Calendar Year 2016**

<b>Characteristic</b>	<b>ECW Deployments</b>		<b>ECW Submissions</b>		<b>Percent that Submit</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Submit</b>	<b>%</b>
<b>Total</b>	<b>676</b>	<b>100.0 %</b>	<b>493</b>	<b>100.0 %</b>	<b>72.9</b>	<b>%</b>
Probe	325	48.1	218	44.2	67.1	
Stun	288	42.6	231	46.9	80.2	
Combined Probe and Stun	63	9.3	44	8.9	69.8	

subject); 42.6% involved individual stun deployments (bringing the ECW device into direct contact with the subject's skin or clothing); 9.3% of deployments involved a combination of probe and stun deployments.

Subjects submitted to individual stun deployments more often than individual probe deployments (80.2% and 67.1%, respectively). Combined probe and stun deployments had a submission rate of 69.8%.

Officers deployed ECW weapons with male subjects more often than female subjects (51.3% and 47.8%, respectively) (Appendix table 2, pg. 15). Black subjects experienced the greatest likelihood of weapon deployment (58.2%) followed by Hispanic subjects (52.1%), and subjects whose race was reported as unknown (50%). Amongst subject age categories, contacts with subjects in their 40s had the highest likelihood of weapon deployment (57.3%, 40-44 years and 57.1%, 45-49 years); contacts with subjects age 50-54 and 55-59 had the lowest likelihood of weapon deployment 39.4% and 40.9%, respectively.

## **TERMS AND DEFINITIONS**

These terms and definitions are provided to police departments on the ECW reporting forms that they submit twice a year.

**Electronic control weapon (ECW)**— a device utilized to immobilize a subject without causing serious injury, typically by administering an electric shock. An ECW is commonly referred to as stun gun or Taser®.

**ECW approved agency**— a law enforcement agency in Massachusetts with an electronic control weapons training program approved by the Secretary of Public Safety and Security.

**ECW contact**— an individual officer's warning and/or deployment of an ECW towards a single subject.

### **ECW deployment:**

**Probe deployment**— the act of firing two small dart-like probes from the ECW, which attach to the subject. The device then delivers a 5-second electrical cycle, which can be repeated as needed in order to incapacitate the subject to the point of submission.

**5-second cycle**— a five second electrical charge resulting from a probe deployment, which can be repeated as needed.

**Stun deployment**— the act of bringing the ECW device into direct contact with the subject's skin or clothing in order to induce pain to the point of submission. Stuns can be repeated as needed if the subject does not initially submit.

**ECW incident**— an event in which an officer (or group of officers) issue a warning and/or deploy an ECW towards a single subject.

### **ECW warning:**

**Laser warning**— a visual warning whereby an officer employs the laser function of the ECW device to indicate that an ECW will be deployed.

**Spark warning**— a visual warning whereby an officer employs a spark on a handheld stun device in order to demonstrate its effectiveness.

**Verbal warning**— a spoken warning whereby an officer indicates to a subject that an ECW may be used. These warnings can be direct, "Stop or you will be tased," or indirect such as when an officer verbally warns other officers that an ECW is about to be deployed (e.g., "Taser, Taser, Taser").



Appendix Table 1. Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Total</b>	<b>841</b>	<b>949</b>	<b>980</b>	<b>1,102</b>	<b>1,241</b>
<b>Non-municipal</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>64</b>
Bridgewater State University <sup>a</sup>	--	--	--	--	3
Cape Cod Regional Law Enforcement Council	0	0	0	0	0
Central MA Law Enforcement Council	--	--	--	1	0
Clark University	--	--	--	0	0
MA State Police	2	0	0	0	61
Massasoit Community College	--	--	0	0	0
Martha's Vineyard Police Tactical Response Team	0	0	0	1	0
Northeast MA Law Enforcement Council	0	0	2	0	0
<b>Municipal</b>	<b>839</b>	<b>949</b>	<b>978</b>	<b>1,100</b>	<b>1,177</b>
Abington	9	3	2	1	1
Acushnet	0	2	5	6	3
Adams	1	4	1	3	2
Amesbury	6	0	0	0	0
Andover	2	2	2	3	1
Aquinnah	--	--	0	0	0
Ashburnham	0	3	4	3	2
Ashland	--	--	--	0	5
Athol	11	41	26	7	4
Attleboro	17	10	6	12	7
Auburn	--	0	8	5	2
Avon	--	--	--	1	1
Ayer	5	10	4	3	3
Barnstable	36	45	25	27	26
Barre	3	6	4	4	10
Becket	--	--	0	0	0
Bedford <sup>a</sup>	--	--	--	--	0
Belchertown	2	4	4	0	3
Berkley	0	0	0	0	1
Bernardston	1	0	0	1	0
Beverly	0	0	0	7	9
Billerica	5	4	2	4	2
Blackstone	2	1	1	3	1
Blandford	--	--	--	0	0
Bolton <sup>a</sup>	--	--	--	--	6
Boston <sup>a</sup>	--	--	--	--	1
Bourne	10	12	7	3	3

Appendix Table 1. (continued) Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency Type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Municipal</b>					
Boxborough	--	0	2	2	0
Boxford	--	--	0	0	0
Boyiston <sup>a</sup>	--	--	--	--	1
Brewster	--	0	0	3	4
Bridgewater	0	2	2	4	3
Brockton	--	6	30	27	15
Brookfield	--	2	7	5	4
Burlington <sup>a</sup>	--	--	--	--	0
Canton	3	2	2	4	2
Carver	--	2	0	5	0
Charlton	--	--	--	0	1
Chatham <sup>a</sup>	--	--	--	--	0
Chelmsford	3	1	2	1	4
Chelsea	6	15	8	5	6
Chicopee	--	--	--	1	16
Chilmark	--	--	--	0	0
Clinton	--	0	15	10	3
Cohasset <sup>a</sup>	--	--	--	--	1
Concord	0	1	0	1	1
Dalton	1	0	0	1	0
Danvers	0	5	12	10	12
Dartmouth	8	13	9	9	5
Deerfield	5	3	1	2	1
Dennis	2	5	1	10	7
Dighton	0	0	0	2	0
Douglas	--	--	--	0	5
Dover	0	2	1	1	0
Dracut	--	5	3	5	7
Dudley <sup>a</sup>	--	--	--	--	0
Dunstable	--	0	0	0	3
Duxbury	2	2	1	2	1
East Bridgewater	3	2	4	1	4
East Brookfield	2	2	1	0	2
Eastham	1	1	0	0	2
Easton	--	--	--	1	8
Edgartown	--	2	4	3	2
Erving	0	0	1	1	0
Essex	--	--	--	0	3

Appendix Table 1. (continued) Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency Type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Municipal</b>					
Everett	--	7	17	23	14
Fairhaven	7	5	2	2	4
Fall River	44	37	29	36	30
Falmouth	15	12	22	20	14
Fitchburg	--	--	--	0	14
Foxborough	6	2	7	7	6
Framingham	4	2	7	8	14
Franklin	3	6	4	5	7
Freetown	0	2	7	1	1
Gardner	12	10	13	13	10
Georgetown	0	1	0	0	0
Gill	0	1	1	0	0
Gosnold	--	--	0	0	0
Grafton	--	0	5	7	12
Granville	0	0	0	0	0
Great Barrington	--	3	12	5	2
Greenfield	12	9	6	3	9
Groton	0	0	0	1	0
Groveland	1	0	0	0	0
Hampden	2	0	0	1	1
Hanson	--	0	4	2	3
Hardwick	3	3	1	1	5
Harwich	0	2	3	2	6
Haverhill	--	--	--	0	0
Hingham	11	5	7	3	8
Holbrook <sup>a</sup>	--	--	--	--	0
Holden	0	2	3	0	2
Holland <sup>a</sup>	--	--	--	--	0
Holliston	--	--	0	0	3
Holyoke	6	37	27	9	23
Hopedale	0	0	2	0	0
Hubbardston	4	1	4	1	2
Hudson	4	5	6	4	2
Hull	--	--	2	7	3
Ipswich	0	0	0	3	3
Kingston	--	--	--	3	5
Lakeville	--	--	0	16	5
Lanesborough	0	0	1	0	0

Appendix Table 1. (continued) Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency Type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Municipal</b>					
Lawrence	26	26	57	52	34
Lee	2	0	0	0	0
Leicester	--	--	--	1	4
Lenox	0	2	0	1	1
Leominster	18	10	10	17	22
Lincoln <sup>a</sup>	--	--	--	--	0
Littleton	1	2	1	3	4
Longmeadow <sup>a</sup>	--	--	--	--	0
Lowell <sup>a</sup>	--	--	--	--	26
Ludlow	--	--	--	0	0
Lunenburg	--	--	0	0	0
Lynnfield	0	0	0	0	1
Mansfield	4	1	3	8	8
Marblehead	--	0	1	1	3
Marion	0	9	1	5	5
Mariborough	0	12	11	10	9
Marshfield	--	--	5	7	5
Mashpee	7	7	4	5	11
Maynard	0	2	5	4	3
Mendon	2	0	1	2	0
Merrimac	--	--	--	2	0
Methuen	1	4	3	13	17
Middleborough	10	6	15	7	7
Middleton	3	1	3	0	0
Milford	3	16	6	6	5
Millbury	--	1	10	6	7
Millville	1	0	2	0	0
Montague	0	0	5	0	0
Nantucket	5	2	2	1	3
Natick	3	10	7	8	8
Needham	--	--	--	2	4
New Bedford	145	125	105	82	63
New Braintree	0	0	0	0	0
New Marlborough	--	--	--	0	0
New Salem <sup>a</sup>	--	--	--	--	0
Newbury	--	2	0	1	0
Newburyport	--	--	--	0	0
Norfolk	0	1	4	1	2

Appendix Table 1. (continued) Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency Type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Municipal</b>					
North Adams	4	5	1	1	2
North Andover	0	0	0	0	3
North Attleboro	0	0	2	2	2
North Brookfield	2	3	1	0	7
North Reading	0	0	0	1	3
Northborough	0	0	0	2	5
Northbridge <sup>a</sup>	--	--	--	--	1
Northfield	0	0	0	0	0
Norton	5	12	9	6	7
Norwell	--	--	--	0	3
Norwood	16	12	10	6	4
Oak Bluffs	--	1	4	4	5
Oakham	--	--	0	4	1
Orange	--	--	--	0	5
Orleans	--	--	0	4	1
Oxford	14	8	10	3	13
Palmer	7	24	13	7	11
Paxton	0	1	0	2	0
Peabody	5	3	3	1	5
Pembroke	8	3	4	5	10
Pepperell	3	6	4	4	8
Petersham	0	1	0	0	0
Phillipston	0	0	0	0	0
Pittsfield	14	13	11	8	11
Plainville	0	3	5	0	3
Plymouth	35	31	22	23	17
Plympton	0	0	2	2	0
Provincetown	2	5	2	5	4
Randolph	--	--	--	6	19
Raynham	0	6	5	5	9
Rehoboth	10	0	3	1	2
Revere	--	--	0	21	15
Rockland	7	7	8	7	2
Rowley	0	0	1	0	2
Rutland	--	--	--	1	4
Salem	--	--	--	0	2
Salisbury	7	2	1	0	0
Sandwich	2	6	2	0	3

Appendix Table 1. (continued) Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency Type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Municipal</b>					
Seekonk	3	17	7	5	11
Sharon	0	0	1	0	0
Sheffield	—	—	0	4	1
Sherborn	3	0	0	1	0
Shirley	—	—	—	0	2
Shrewsbury	—	—	0	0	0
Shutesbury <sup>a</sup>	—	—	—	—	1
Somerset	1	3	1	0	3
South Hadley	5	0	3	5	9
Southborough	—	—	0	0	1
Southbridge	36	18	15	21	15
Southwick	—	2	1	0	0
Spencer	3	10	2	10	3
Springfield	—	—	—	14	65
Sterling	2	0	3	0	2
Stockbridge	—	—	—	2	0
Stoughton	6	24	13	20	10
Stow	—	—	—	0	0
Sturbridge	1	1	6	10	4
Sudbury	—	—	0	0	0
Sunderland	0	0	0	0	0
Sutton	—	—	—	0	0
Swampscott	0	0	2	0	0
Swansea	3	4	4	4	5
Taunton	22	18	27	12	10
Templeton	0	2	3	1	0
Tewksbury	12	11	9	14	18
Tisbury	—	0	0	2	0
Topsfield	3	0	0	0	0
Townsend	—	—	0	1	1
Truro	2	2	2	0	2
Tyngsborough	0	1	1	7	2
Upton	—	0	0	0	0
Uxbridge	—	—	0	0	8
Wakefield <sup>a</sup>	—	—	—	—	3
Wales <sup>a</sup>	—	—	—	—	0
Walpole	—	—	2	11	3
Wareham	31	14	27	24	15

Appendix Table 1. (continued) Number of Municipal and Non-municipal ECW Incidents, Calendar Years 2012-2016

Agency Type	Number of ECW Incidents and Year				
	2012	2013	2014	2015	2016
<b>Municipal</b>					
Warren	--	2	0	1	1
Warwick	--	0	0	0	0
Webster	9	8	11	13	9
Wellfleet	--	1	0	0	0
Wenham	--	--	--	0	1
West Boylston	0	1	2	1	0
West Bridgewater	--	0	1	5	0
West Brookfield	--	3	2	1	0
West Springfield	0	1	6	16	19
West Stockbridge	--	--	--	0	0
West Tisbury	--	--	0	0	0
Westborough <sup>a</sup>	--	--	--	--	1
Westfield	18	16	14	23	10
Westminster	5	2	1	4	1
Westport	2	6	1	1	1
Westwood	--	--	0	0	5
Weymouth	--	--	--	0	6
Whitman	--	--	--	11	4
Williamstown	1	5	2	2	0
Winchendon	3	6	1	6	4
Winchester	--	--	--	0	0
Woburn	--	0	3	4	2
Worcester	7	4	9	59	45
Wrentham	--	--	3	11	5
Yarmouth	9	4	10	6	4

-- Cells denoted by a "--" indicate that the agency did not have an approved ECW training program that year.

<sup>a</sup>The Executive Office of Public Safety and Security approved the ECW policies for these agencies during calendar year 2016, therefore, the data reported is not for a full year.

Appendix Table 2. Distribution of ECW Contacts, Warnings, and Deployments by Subject Sex and Race, Calendar Year 2016

Characteristic	Contacts		Warnings		ECW Deployments		Percent of Contacts with a Warning	Percent of Contacts with an ECW Deployment
	Number	Percent	Number	Percent	Number	Percent		
<b>Total</b>	<b>1,328</b>	<b>100.0%</b>	<b>1,170</b>	<b>100.0%</b>	<b>676</b>	<b>100.0%</b>	<b>88.1%</b>	<b>50.9%</b>
<b>Sex</b>	<b>1,328</b>	<b>100.0%</b>	<b>1,170</b>	<b>100.0%</b>	<b>676</b>	<b>100.0%</b>	<b>88.1%</b>	<b>50.9%</b>
Male	1,231	92.7	1,086	92.8	631	93.3	88.2	51.3
Female	92	6.9	79	6.8	44	6.5	85.9	47.8
Unknown	5	.4	5	.4	1	.1	--	--
<b>Race</b>	<b>1,328</b>	<b>100.0%</b>	<b>1,170</b>	<b>100.0%</b>	<b>676</b>	<b>100.0%</b>	<b>88.1%</b>	<b>50.9%</b>
White	814	61.3	714	61.0	398	58.9	87.7	48.9
Black	256	19.3	226	19.3	149	22.0	88.3	58.2
Hispanic	217	16.3	196	16.8	113	16.7	90.3	52.1
Other <sup>a</sup>	19	1.4	16	1.4	5	.7	84.2	26.3
Unknown	22	1.7	18	1.5	11	1.6	81.8	50.0

<sup>a</sup>The race/ethnic categories of American Indian/Alaska Native, Asian, Native Hawaiian or other Pacific Islander, two or more race, and other (specified) comprise *other*.

-- Percentages with such a small denominator are not statistically reliable.

Appendix Table 3. Distribution of ECW Contacts, Warnings, and Deployments by Subject Age, Calendar Year 2016

Subject Age	Contacts		Warnings		ECW Deployments		Percent of Contacts with a Warning	Percent of Contacts with an ECW Deployment
	Number	Percent	Number	Percent	Number	Percent		
<b>Total</b>	<b>1,328</b>	<b>100.0%</b>	<b>1,170</b>	<b>100.0%</b>	<b>676</b>	<b>100.0%</b>	<b>88.1%</b>	<b>50.9%</b>
17 or Younger	46	3.5	46	3.9	22	3.3	100.0	47.8
18-19 Years	48	3.6	41	3.5	25	3.7	85.4	52.1
20-24 Years	243	18.3	214	18.3	117	17.3	88.1	48.1
25-29 Years	261	19.7	223	19.1	140	20.7	85.4	53.6
30-34 Years	212	16.0	179	15.3	113	16.7	84.4	53.3
35-39 Years	137	10.3	127	10.9	72	10.7	92.7	52.6
40-44 Years	103	7.8	87	7.4	59	8.7	84.5	57.3
45-49 Years	91	6.9	79	6.8	52	7.7	86.8	57.1
50-54 Years	66	5.0	62	5.3	26	3.8	93.9	39.4
55-59 Years	44	3.3	43	3.7	18	2.7	97.7	40.9
60-64 Years	13	1.0	11	.9	6	.9	84.6	46.2
65 or Older	7	.5	7	.6	4	.6	--	--
Unknown	57	4.3	51	4.4	22	3.3	89.5	38.6

-- Percentages with such a small denominator are not statistically reliable.



Appendix Table 4. Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Total</b>	<b>518</b>	<b>566</b>	<b>1,084</b>
<b>Non-municipal</b>	<b>26</b>	<b>12</b>	<b>38</b>
Bridgewater State University <sup>b</sup>	0	0	0
Cape Cod Regional Law Enforcement Council	0	0	0
Central MA Law Enforcement Council	0	0	0
Clark University	0	0	0
MA State Police	26	12	38
Massasoit Community College	0	0	0
MV Police Tactical RT	0	0	0
Northeast MA Law Enforcement Council	0	0	0
<b>Municipal</b>	<b>492</b>	<b>554</b>	<b>1,046</b>
Abington	1	0	1
Acushnet	2	0	2
Adams	2	0	2
Amesbury	0	0	0
Andover	0	0	0
Aquinnah	0	0	0
Ashburnham	0	0	0
Ashland	4	6	10
Athol	0	0	0
Attleborough	3	1	4
Auburn	0	0	0
Avon	0	1	1
Ayer	0	1	1
Barnstable	36	22	58
Barre	4	1	5
Becket	0	0	0
Bedford <sup>b</sup>	0	0	0
Belchertown	0	2	2
Berkley	0	1	1
Bernardston	0	0	0
Beverly	4	7	11
Billerica	4	0	4
Blackstone	0	1	1
Blandford	0	0	0
Bolton <sup>b</sup>	2	1	3
Boston <sup>b</sup>	0	0	0

Appendix Table 4. (continued) Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Municipal</b>	<b>492</b>	<b>554</b>	<b>1,046</b>
Bourne	3	4	7
Boxborough	0	0	0
Boxford	0	0	0
Boylston <sup>b</sup>	0	0	0
Brewster	0	0	0
Bridgewater	1	3	4
Brockton	13	29	42
Brookfield	1	0	1
Burlington <sup>b</sup>	0	0	0
Canton	0	0	0
Carver	0	0	0
Charlton	1	0	1
Chatham <sup>b</sup>	0	0	0
Chelmsford	0	0	0
Chelsea	4	8	12
Chicopee	3	9	12
Chilmark	0	0	0
Clinton	0	0	0
Cohasset <sup>b</sup>	0	0	0
Concord	6	6	12
Dalton	0	0	0
Danvers	0	2	2
Dartmouth	1	1	2
Deerfield	1	0	1
Dennis	5	3	8
Dighton	0	0	0
Douglas	0	0	0
Dover	0	0	0
Dracut	1	0	1
Dudley <sup>b</sup>	0	0	0
Dunstable	0	2	2
Duxbury	2	0	2
East Bridgewater	1	1	2
East Brookfield	0	1	1
Eastham	0	0	0
Easton	1	1	2
Edgartown	0	0	0

Appendix Table 4. (continued) Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Municipal</b>			
Erving	0	0	0
Essex	0	0	0
Everett	12	11	23
Fairhaven	4	5	9
Fall River	18	9	27
Falmouth	7	7	14
Fitchburg	5	0	5
Foxborough	0	7	7
Framingham	8	12	20
Franklin	1	0	1
Freetown	0	1	1
Gardner	2	3	5
Georgetown	0	0	0
Gill	0	0	0
Gosnold	0	0	0
Grafton	4	1	5
Granville	0	0	0
Great Barrington	4	0	4
Greenfield	2	0	2
Groton	0	0	0
Groveland	0	0	0
Hampden	1	0	1
Hanson	4	3	7
Hardwick	1	1	2
Harwich	7	0	7
Haverhill	0	0	0
Hingham	0	0	0
Holbrook <sup>b</sup>	0	0	0
Holden	2	0	2
Holland <sup>b</sup>	0	0	0
Holliston	0	1	1
Holyoke	6	10	16
Hopedale	0	0	0
Hubbardston	1	0	1
Hudson	0	3	3
Hull	0	3	3
Ipswich	1	0	1

Appendix Table 4. (continued) Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Municipal</b>			
Kingston	1	2	3
Lakeville	4	0	4
Lanesborough	0	0	0
Lawrence	18	17	35
Lee	0	0	0
Leicester	0	0	0
Lenox	0	1	1
Leominster	6	8	14
Lincoln <sup>b</sup>	0	0	0
Littleton	0	2	2
Longmeadow <sup>b</sup>	0	0	0
Lowell <sup>b</sup>	3	6	9
Ludlow	0	0	0
Lunenburg	0	0	0
Lynnfield	0	0	0
Mansfield	0	4	4
Marblehead	1	1	2
Marion	1	2	3
Marlborough	6	5	11
Marshfield	4	5	9
Mashpee	6	4	10
Maynard	0	0	0
Mendon	0	0	0
Merrimac	0	0	0
Methuen	11	7	18
Middleborough	4	0	4
Middleton	0	0	0
Milford	1	6	7
Millbury	1	0	1
Millville	0	0	0
Montague	0	0	0
Nantucket	1	5	6
Natick	15	1	16
Needham	0	0	0
New Bedford	32	30	62
New Braintree	0	0	0
New Marlborough	0	0	0

Appendix Table 4. (continued) Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Municipal</b>			
New Salem <sup>b</sup>	0	0	0
Newbury	0	0	0
Newburyport	0	0	0
Norfolk	1	1	2
North Adams	2	0	2
North Andover	0	4	4
North Attleborough	2	0	2
North Brookfield	0	1	1
North Reading	1	1	2
Northborough	0	1	1
Northbridge <sup>b</sup>	0	0	0
Northfield	0	0	0
Norton	4	1	5
Norwell	1	0	1
Norwood	0	0	0
Oak Bluffs	0	0	0
Oakham	0	0	0
Orange	3	3	6
Orleans	0	0	0
Oxford	0	2	2
Palmer	2	5	7
Paxton	0	0	0
Peabody	1	2	3
Pembroke	4	6	10
Pepperell	2	5	7
Petersham	0	0	0
Phillipston	0	0	0
Pittsfield	13	2	15
Plainville	0	2	2
Plymouth	19	8	27
Plympton	0	0	0
Provincetown	0	0	0
Randolph	6	7	13
Raynham	1	3	4
Rehoboth	1	0	1
Revere	4	13	17
Rockland	2	0	2

Appendix Table 4. (continued) Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Municipal</b>			
Rowley	2	0	2
Rutland	1	1	2
Salem	2	2	4
Salisbury	0	0	0
Sandwich	1	0	1
Seekonk	2	3	5
Sharon	0	0	0
Sheffield	0	10	10
Sherborn	0	0	0
Shirley	0	5	5
Shrewsbury	0	0	0
Shutesbury <sup>b</sup>	0	0	0
Somerset	1	0	1
South Hadley	3	0	3
Southborough	0	1	1
Southbridge	3	8	11
Southwick	0	0	0
Spencer	1	2	3
Springfield	18	63	81
Sterling	1	0	1
Stockbridge	0	0	0
Stoughton	3	4	7
Stow	0	0	0
Sturbridge	1	0	1
Sudbury	0	0	0
Sunderland	0	0	0
Sutton	0	0	0
Swampscott	0	0	0
Swansea	0	2	2
Taunton	10	2	12
Templeton	0	0	0
Tewksbury	7	2	9
Tisbury	0	0	0
Topsfield	0	0	0
Townsend	1	0	1
Truro	0	2	2
Tyngsborough	1	1	2

Appendix Table 4. (continued) Number of Municipal and Non-municipal ECW Deployments, 2016

Agency Type	Number of ECW Deployments <sup>a</sup>		
	Probe Cycles	Stuns	Total
<b>Municipal</b>			
Upton	0	0	0
Uxbridge	0	3	3
Wakefield <sup>b</sup>	0	0	0
Wales <sup>b</sup>	0	0	0
Walpole	0	1	1
Wareham	9	18	27
Warren	1	0	1
Warwick	0	0	0
Webster	2	2	4
Wellfleet	0	0	0
Wenham	0	0	0
West Boylston	0	0	0
West Bridgewater	0	0	0
West Brookfield	0	0	0
West Springfield	8	18	26
West Stockbridge	0	0	0
West Tisbury	0	0	0
Westborough <sup>b</sup>	0	0	0
Westfield	4	10	14
Westminster	2	0	2
Westport	1	0	1
Westwood	2	2	4
Weymouth	1	1	2
Whitman	0	1	1
Williamstown	0	0	0
Winchendon	3	0	3
Winchester	0	0	0
Woburn	4	2	6
Worcester	14	19	33
Wrentham	0	2	2
Yarmouth	3	3	6

<sup>a</sup>Multiple ECW deployments may occur during a single ECW incident (e.g., one incident can involve multiple ECW deployments or multiple officers with multiple deployments). This scenario would result in a higher number of deployments than incidents for the agency.

<sup>b</sup>The Executive Office of Public Safety and Security approved the ECW policies for these agencies during calendar year 2016; therefore, these agencies do not have a full year's worth of ECW usage data to report.

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## **ABOUT THE RESEARCH AND POLICY ANALYSIS DIVISION**

A division of the Massachusetts Executive Office of Public Safety and Security, Office of Grants and Research, the Research and Policy Analysis Division (RPAD) and its Statistical Analysis Center, uses research and evaluation to promote public safety. RPAD works on a number of projects including: electronic control weapons reporting, provider sexual crime report analysis, the collection of statewide county release data for recidivism, and the development of criminal justice data standards.

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**Massachusetts Executive Office of Public Safety and Security  
Office of Grants and Research, Research and Policy Analysis Division  
10 Park Plaza, Suite 3720  
Boston, MA 02116**

**Angela F.F. Davis, Executive Director**

**Lisa Sampson, Director, Research and Policy Analysis Division**  
[lisa.sampson@state.ma.us](mailto:lisa.sampson@state.ma.us)  
617-725-3306